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ABSTRACT

Dental health education can be an integral part of the school curriculum, even when there are constraints on time and money and a formal health instruction program is lacking. Under these less than ideal circumstances, dental health education may be correlated at all grade levels with instruction in other subjects including, but not limited to, language arts, social studies, mathematics, chemistry, drama, and art. This booklet is designed to serve as a resource for use in planning and conducting such an approach to dental health instruction. Each module includes a behavioral objective, suggested content, one or more learning activities, and suggested resources. The objectives have been stated in ways that facilitate their achievement through learning opportunities in other subject areas. General guidelines regarding appropriate grade levels, host subjects, and time allotment are included. Procedures and criteria for evaluating student progress are not described in detail; however, they are strongly suggested by the wording of the objectives. It should be noted that the instructional modules presented here do not provide for instruction in oral hygiene technique and skills. This resource book is intended primarily for the classroom teacher who might wish to take the initiative in incorporating dental health instruction into an existing curriculum. However, it may also be useful to dental health consultants, either when working directly with students in classroom situations, or when serving as a resource to school personnel. It is hoped that persons who are vitally concerned about the dental health of children and youth will find this resource helpful in their efforts to promote more, and more effective, dental health instruction in the schools. (MM)

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YES, YOU CAN TEACH DENTAL HEALTH

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YES, YOU CAN TEACH DENTAL HEALTH

Correlation of Dental Health Education With Other Classroom Subjects K - 12

by

Teresa Mae Perkins Poulos, R.D.H., B.A., M.Ed.

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American Alliance for Health, Physical Education, and Recreation
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Preface

Dental health education can be an integral part of the school curriculum, even when there are constraints on time and money and a formal health instruction program is lacking. Under these less-than-ideal circumstances, dental health education may be correlated at all grade levels with instruction in other subjects including, but not limited to: language arts, social studies, mathematics, chemistry, drama, and art.

This booklet is designed to serve as a resource for use in planning and conducting such an approach to dental health instruction. Each module includes a behavioral objective, suggested content, one or more learning activities, and suggested resources. The objectives have been stated in ways that facilitate their achievement through learning opportunities in other subject areas. While appropriate use of these modules is left to the discretion of individual educators, general guidelines regarding appropriate grade levels, host subjects and time allotment are included. Procedures and criteria for evaluating student progress are not described in detail. However, they are strongly suggested by the wording of the objectives.

It should be noted that the instructional modules presented here do not provide for instruction in oral hygiene techniques and skills. Therefore, while correlated approaches to dental health instruction guided by use of this booklet may help students develop valid dental health concepts and attitudes favorable to recommended practices, optimal benefits will accrue when correlated instruction is complemented by one or more units of instruction focusing specifically on dental health and addressing dental health concepts in their own right. When this is done, the latter should be directed toward the development of proficiency in the extension and application of concepts formed through correlated learning experiences.

Since classroom teachers have daily contact with their students and know them well, they can be very effective dental health educators. Therefore, this resource is intended primarily for the classroom teacher who might wish to take the initiative in incorporating dental health instruction into an existing curriculum. However, it also may be useful to dental health consultants, either when working directly with students in classroom situations, or when serving as a resource to school personnel -- singly or in groups. It is hoped that persons who are vitally concerned about the dental health of children and youth will find this resource helpful in their efforts to promote more -- and more effective -- dental health instruction in the schools.

The author would like to thank Lucille Trucano for her guidance in the original development of this resource for use in the Seattle, Washington Public Schools, and Chris Kilo of the Office of Research in Medical Education, Kellogg Project, at the University of Washington, for her clerical assistance. My deepest appreciation also is extended to Barbara A. Cooley for her encouragement and editing which led to the final manuscript.

Arithmetic
Kindergarten
Counting & Classifying Teeth
15 minutes

OBJECTIVE: Given a set of tooth-shaped objects, the student places them into three separate groups according to characteristics of appearance with 100% accuracy.

SUGGESTED CONTENT:

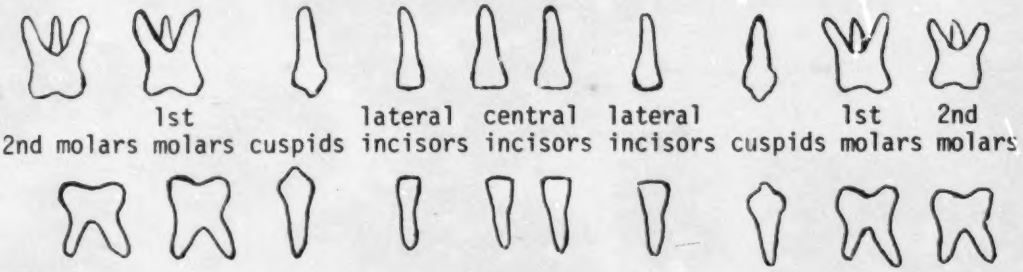
The primary dentition consists of:

4 central incisors (2 upper, 2 lower)
4 lateral incisors (2 upper, 2 lower)
Incisors cut food.
4 cuspids (2 upper, 2 lower)
Cuspids tear food.
4 1st primary molars (2 upper, 2 lower)
4 2nd primary molars (2 upper, 2 lower)
Molars grind food.

At about age six, the child loses the lower central incisors, and permanent teeth replace them. Also, the six-year (1st permanent) molar erupts behind the last tooth in each arch.

LEARNING ACTIVITY:

Students are given a set of 20 tooth-shaped props. First, instruct them to count these props. Then their assignment is to group them according to their appearance. They will count the number of teeth in each group. Then say that each group performs a particular function in the mouth. Incisors cut (8), cuspids tear (4), and molars grind (8). Point out to the children that they, too, have this many teeth which do all those things.
Follow-up Activity: As students begin to lose primary teeth, recognize it in front of the class and ask them which kind of tooth it is. Also, remind students that a new permanent tooth will grow to replace it and with care, will perform the same function for the rest of their lives.



SUGGESTED RESOURCES:

Heavyweight paper cut into tooth forms copying examples provided here; S4 "Your Teeth and What They Do," 25 @ $1.60, 100 @ $6.10, 500 @ $28.80, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Arithmetic
Elementary (2-6)
Dental Story Problems
On-going

OBJECTIVE: The student demonstrates mastery of mathematical skills by solving story problems containing dental terminology.

SUGGESTED CONTENT:

Example story problems -

Early elementary:

1. Tommy had 20 primary teeth. Between his sixth and eighth birthdays, he lost 8 incisors. How many primary teeth does he still have?

Upper elementary:

2. Heather has just had her dental appointment. The dental hygienist cleaned and examined her teeth, took X-rays, and gave her a fluoride treatment. She learned that the cleaning cost $11, the fluoride treatment cost $4, X-rays cost $8, and the examination cost $5. She has 5 cavities that need to be filled. Each filling will cost $11.
   a. How much is the total bill for the care?
   b. How much would have been saved if Heather had had no cavities?

LEARNING ACTIVITY:

Use dental ideas for story problems. Teeth can be used instead of apples and oranges. Use the dental office as a setting in some problems. By using the dental terms, the students become more familiar with dentistry, but also learn their arithmetic. The nature of the problems will depend upon the mathematical skills being studied.

SUGGESTED RESOURCES:

Story problems using dental terminology. If more information about dental terminology is desired, consult a general dental health brochure such as G7 "Your Guide to Oral Health," 25 @ $5.30, 100 @ $20.10, 500 @ $95.15, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Science (Nutrition)
Elementary
Snacks
30 minutes

OBJECTIVE: Given the opportunity to choose among several foods, the student increases the frequency with which he or she selects snacks which are conducive to dental health.

SUGGESTED CONTENT:

Foods containing refined sugars lead to dental decay most rapidly. Carbohydrates which are not "sweet" can also contribute to decay but they are not as bad for teeth as foods loaded with sugar. Foods such as fresh fruits and vegetables, as well as others, do not lead to decay, and contrary to former beliefs, they do not clean teeth either.

LEARNING ACTIVITY:

Ask students to list the foods they enjoy for snacks. You or a student will record them on the board. Ask students what makes certain snacks increase one's chances of getting cavities, and make sure that all material in "content" section is covered. Then students will classify snacks into those good for dental health and those which lead to dental decay. Upon completion of this activity, you or a student may suggest that at future class parties snacks conducive to dental health be served. Students then help compose a letter to be reproduced and sent home to parents informing them of the new party snack recommendations and encouraging them to have these "good" snacks available at home, too. All snacks provided for school functions from then on will be provided in accordance with these recommendations.

SUGGESTED RESOURCE:

List of snack foods with low sugar content will be found in P28 "Kick the Sweet Snack Habit," 100 @ $2.90, 500 @ $13.80, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Social Studies
Elementary (4-6)
Diets Compared Cross-Culturally
On-going

OBJECTIVE: Given information about dietary practices in other cultures, the student describes similarities and differences between those practices and his or her own.

SUGGESTED CONTENT:

Examples of nutritionally comparable foods: fish vs. beef or pork, goat's milk vs. cow's milk.
More sugar leads to more decay.

LEARNING ACTIVITY:

In the process of learning about other countries and their cultures, either you or a student may mention a variety of foods typically eaten by members of each culture. Students then may be asked to name foods they eat that are nutritionally comparable to those eaten in the other culture.
Follow-up Activity: Compare the sugar content of snack foods typically eaten by the students with that of snack foods eaten by children in other cultures. Use the results as a basis for speculating on the relative incidence of dental decay.

SUGGESTED RESOURCES:

Geography book or some other book discussing foods in other countries; a chart of the Basic Four Food Groups available from National Dairy Council and state affiliates; list of sugar content of common foods found in P28 "Kick the Sweet Snack Habit," 100 @ $2.90, 500 @ $13.80, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Physical Education
Elementary (K-3)
Dental Safety
20 minutes

OBJECTIVE: Given a description of a real or hypothetical situation involving a threat of dental injury, the student can state the appropriate preventive and treatment measures to be followed.

SUGGESTED CONTENT.

Primary prevention (to prevent injury):
1. Watch where they are going.
2. Don't over-extend themselves.
3. Keep safe distances from bats and other moving objects.
4. Slow down in places where danger could be imminent.

Secondary prevention (to prevent unnecessary complications following injury):
1. Report injury to teacher, parent, or other adult.
2. Encourage adult to seek professional consultation.
3. Continue to watch for changes in appearance of or feeling in the injured tooth any time after the injury.
4. If changes occur, report them to an adult and seek professional care.

LEARNING ACTIVITY:

At the beginning of each year (and periodically throughout the year), review safety practices. As safe practices on bicycles, playgrounds, and other play activities are discussed, you may mention and guide students in a discussion of ways to prevent accidents and the actions that should be taken if a mouth injury does occur. Suggested questions to stimulate discussion:
1. Has anyone had an accident which caused a dental injury? How did it happen? What resulted?
2. What activities are you involved in that might pose a threat of dental injury?
3. What are some rules we might follow to prevent dental accidents?

SUGGESTED RESOURCE:

G7 "Your Guide to Oral Health," 25 @ $5.30, 100 @ $20.10, 500 @ $95.15, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Art
Elementary (4-6)
Dental Posters
1 class period

OBJECTIVE: The student prepares a visual display that will facilitate the learning of others by communicating accurate information about dental health.

SUGGESTED CONTENT:

Dental safety
Functions of teeth
Visiting the dentist
Home oral health care
Fluorides
Tooth Decay
Braces
Sugar and your teeth

LEARNING ACTIVITY:

Suggest that visual displays are needed for the community and school to remind the public and both students and teachers about dental health. Provide students with materials and ask them to design projects that communicate a dental health concept. Suggestions for content are offered here but anything which deals accurately and positively with dental health would be appropriate. Upon completion of the project, students will place their displays in the community and school as is permitted. This activity may be repeated as desired with different subject areas or art materials.

SUGGESTED RESOURCES:

Standard art supplies; G7 "Your Guide to Oral Health," 25 @ $5.30, 100 @ $20.10, 500 @ $95.15, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Music, Language Arts
Elementary (4-6)
Dental Songs
1 or more class periods

OBJECTIVE: The student composes lyrics to a song that can be used to facilitate the dental health education of others.

SUGGESTED CONTENT:

Grandpa's false teeth
Wearing braces
Brushing and flossing
Candy and caries (cavities)
"Novocaine" (sleepy teeth)
"Laughing gas"

LEARNING ACTIVITY:

Ask students to select a tune they like and then write new words for it to convey a message about dental health. You can help by writing suggested words on the board and assuring that the lyrics communicate a comprehensible, complete message. Lyrics may be humorous. Students then practice the song in preparation for presentation in an assembly, PTA program, or other classrooms. Alternative for primary grade students: Students learn songs about teeth which already exist -- such as, "All I Want for Christmas is My Two Front Teeth" -- and present them.

SUGGESTED RESOURCE:

G7 "Your Guide to Oral Health," 25 @ $5.30, 100 @ $20.10, 500 @ $95.15, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Science
Elementary & #3 Jr. High
Tooth Decay
Initial: 5-15 minutes
Follow-up: 10-25 minutes

OBJECTIVE: Given the opportunity to compare and contrast the process of tooth decay in the mouth with similar processes that occur in other materials and in other environments, the student can state the similarities and differences between tooth decay in the mouth and each of the other processes observed.

SUGGESTED CONTENT:

1. The decay process seen in the apple occurs, but at a slower rate, in teeth. Therefore, cavities should be filled early, before great damage (not always visible to you) takes place.
2. The softened egg is comparable to the first stage of dental decay - decalcification: acid breaks down the hardened tooth enamel. If we prevent the acid from forming by keeping our teeth clean, the decay process will not progress in our mouths.
3. Teeth will decay in sugar (pop) and soften in acid (vinegar) solutions. Saliva helps plaque and calculus (hard deposits) form on teeth. Water will have no effect on the teeth in this situation.

Sugars combine with bacteria and saliva to form plaque. (Plaque is the filmy substance which forms on teeth and feels "furry" to the tongue.) In this process, acid is formed. Acid breaks down tooth enamel and begins the decay process. Plaque may also calcify (harden) into calculus (tartar). Calculus acts as an irritant to the gum tissue and is an important causative factor in periodontal disease (gum disease or pyorrhea). By eating less sugar and keeping teeth clean (removing plaque) by brushing and flossing, people can reduce the incidence of dental disease.

LEARNING ACTIVITY:

Several experiments are set up in the classroom, two of which are short-term, one of which is longer term.

1. Bring in an unbruised apple and show it to the class. For this lesson, the apple will be compared to teeth. Poke a hole in the apple with a pencil and set the apple aside. This hole is compared to the beginning of tooth decay. At the end of a few days, the apple is cut open and students observe the extent of the decay inside the apple. (Initial: 5 minutes, Follow-up: 10 minutes)
2. Bring in a hard-cooked egg and compare it to teeth without decay. Then place the egg in vinegar, explaining that teeth are bathed in acid if plaque and food debris are left on them and react with saliva. After 24 hours, the students examine the eggshell and see that it has softened. (Initial: 5 minutes, Follow-up: 10 minutes)
3. Obtain extracted, but not badly decayed, teeth from a dentist, or collect children's teeth which have been shed. Explain to the class that different oral conditions affect teeth in different ways. You will simulate some of the conditions which may exist. Place one tooth, noting condition, in each of four glasses. Then add a different liquid to each and label as such.

Science
Elementary & #3 Jr. High
Tooth Decay
Initial: 5-15 minutes
Follow-up: 10-25 minutes

LEARNING ACTIVITY Cont'd...

Liquids include: saliva, soft drink, vinegar, water. Let them set for several weeks and then observe condition again. Guide students in relating their observations to the potential consequences of variable environmental conditions in their own mouths. Students should then discuss ways they can reduce decay in their own mouths by not allowing sugary and acidic processes to occur. (Initial: 15 minutes, Follow-up: 25 minutes)

SUGGESTED RESOURCES:

Apple, hard-cooked egg, vinegar, dish, extracted teeth, saliva, water, pop, four glasses. These experiments are similar to some suggested in Learning About Your Oral Health, Teaching Packets, Levels I - IV (K-12), from the American Dental Association; S4 "Your Teeth and What They Do," (section on dental caries) 25 @ $1.60, 100 @ $6.10, 500 @ $28.80; G7 "Your Guide to Oral Health," 25 @ $5.30, 100 @ $20.10, 500 @ $95.15, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Language Arts
Elementary (4-6) & Jr. High
Dental Vocabulary
30 minutes each day

OBJECTIVE: The student uses correctly spelled dental terms in ways that reflect their definitions accurately.

SUGGESTED CONTENT:

Suggested vocabulary words:

incisor-teeth located in center front of mouth, used to cut food
cuspid-teeth located at corners of mouth to tear food
molar-teeth located in back of mouth to grind food, several cusps and roots
plaque-a film which collects on the teeth composed of food, saliva, and bacteria
caries-localized disease process that destroys tooth structure; tooth decay
fluoride-a chemical added to water or applied to teeth to reduce incidence of decay
malocclusion-irregularity of tooth position and poor fitting together of the teeth on closing the jaws
periodontal-relating to structures around the teeth
gingiva-soft tissue around teeth; gums
enamel-hard, glistening substance covering crowns of teeth
amalgam-a mixture of metals used to fill/restore teeth; a filling
prophylaxis-a professional preventive practice of cleaning the teeth
dentin-ivorylike substance underlying enamel that forms the body of teeth

LEARNING ACTIVITY:

Include words from a list of dental terms on the spelling and vocabulary list for the week. Students will be exposed to the words each day in one or more of the following activities:

Day 1--Students look up each word in their dictionaries and write down its definition, divide into syllables, and learn its pronunciation.
Day 2--Students form groups of three in which they begin constructing a crossword puzzle using these words.
Day 3--Dental pamphlets or comic books are passed out. Students read them. Following their reading, they write a short summary of the major dental concepts presented.
Day 4--Students complete group work on puzzles.
Day 5--Vocabulary test or review will consist of spelling each word, and then using it in a sentence.

Follow-up Activity: After these tasks have been completed, distribute copies of the student-created crossword puzzles for spare time work.

SUGGESTED RESOURCES:

Dictionaries, pencils, paper, rulers. Dental pamphlets or comic books (e.g., G47 "Casper and Space-Age Dentistry," 25 @ $2.05, 100 @ $7.75, 500 @ $36.80; G34 "What Happened to Mike?," 100 @ $4.75, 500 @ $22.40; G45 "Dudley the Dragon," 25 @ $1.55, 100 @ $5.90, 500 @ $27.90; etc.) from the American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611 or other producers of dental health education materials.

Language Arts/Speech/Drama
Elementary (3-6) or Junior High
Dental Play
2 to 3 weeks

OBJECTIVE: The student participates in preparing for and presenting a play to facilitate the dental health education of others.

SUGGESTED CONTENT:

A synopsis of The Toothache Mystery: The Trail of the Dental Health Six:

Terry Teen-Ager has a toothache and has brought the Dental Health Six to trial because she thinks they caused her problem. On the contrary, she has brought the problem upon herself by not listening to (1) her mother, and (2) the school nurse, not visiting (3) the dentist, not using (4) her toothbrush, and (5) toothpaste often enough, and eating too much (6) candy. On the basis of that information, the Dental Health Six are found "not guilty" and Terry Teen-Ager learns how to take care of her teeth so she will have good dental health.

LEARNING ACTIVITY:

The students will prepare for presentation the play, The Toothache Mystery: The Trial of the Dental Health Six. They will learn principles of play production and acting and also will review dental health facts in an enjoyable way. When the play is ready, arrangements can be made for its presentation to one or more of several audiences, such as students in other classes, children in pre-schools, parents, and senior citizen groups. Specific details about production and presentation are included with play. Disregard sex role stereotypes when casting characters for parts.

SUGGESTED RESOURCE:

The Toothache Mystery: The Trial of the Dental Health Six, Crest Professional Services Division, Procter and Gamble, 301 E. Sixth St., Cincinnati, Ohio 45202 (one of many free materials).

Language Arts
Junior High
Dental Stories, Poems and Plays
1 class period

OBJECTIVE: The student authors a story, poem, or play about dental health that can be used to facilitate the learning of others.

SUGGESTED CONTENT:

Home care - toothbrushing and flossing
Visit to dentist
Tooth functions
Diet and dental health
Plaque
Orthodontics
Tooth decay

LEARNING ACTIVITY:

Instruct students to write a story, poem, or play dealing with one aspect of dental health. They should utilize language skills and creativity in the development of the project. Upon completion of the assignment, the final products may be presented to this class, assemblies, parents, elementary students, pre-school children and senior citizens.

SUGGESTED RESOURCE:

G7 "Your Guide to Oral Health," 25 @ $5.30, 100 @ $20.10, 500 @ $95.15, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Speech/Drama
Junior High
Tooth Play/Puppet Show
2 weeks

OBJECTIVE: Students present an original play or puppet show about dental health to facilitate their own and others' learning.

SUGGESTED CONTENT:

Functions of teeth
Visiting the dentist
Home care - toothbrushing and flossing
Diet and dental health
Orthodontics
Plaque
Fluoride
Dental decay
Healthy gums

LEARNING ACTIVITY:

Introduce the unit as a general speech/drama project, but one which uses dental health as its subject matter. Students are divided into groups of five. Each group is assigned to make up a story on a different dental health topic. This may be presented either as a play in which students themselves are the actors or as a puppet show. Through this series of activities students will write the story, plan its presentation, design a stage and props, make puppets or costumes. You should follow whatever procedures you usually follow but be sure content about dental health is accurate and complete. The plays or puppet shows will then be presented to the class.
Follow-up activity: Students may visit nearby elementary and pre-schools to present their shows to the younger students. Also, they could present their programs to parents and senior citizens.

SUGGESTED RESOURCES:

General supplies used for plays and puppet shows; G7 "Your Guide to Oral Health," 25 @ $5.30, 100 @ $20.10, 500 @ $95.15, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

English
Jr. High and High School
Writing Dental Advertisements
Initial: 15 minutes
Follow-up: 30 minutes

OBJECTIVE: The student differentiates between realistic and sensationalistic claims about dental products by giving one example of each.

SUGGESTED CONTENT:

Products which may be considered are:
Toothpastes--fluorides are good, whitening and abrasion are poor; without proper home care behavior, they do little to combat dental disease.

Toothbrushes--soft, flat, multi-tufted best; electric unnecessary except in cases in which dexterity is a problem, can massage gums
Dental floss--unwaxed generally best

Water-irrigating devices--OK for stimulation of gums and gross debris removal, no substitute for toothbrush and floss

Mouthwashes--usually unnecessary, may disturb normal balance of bacteria in the mouth

No dental product itself can prevent or cure dental disease. A combination of factors--including manual dexterity, systemic conditions, diet, motivation, frequency of use, professional dental care--determines the incidence of dental disease. Consumer products can serve as adjuncts to these other factors in promoting dental health.

LEARNING ACTIVITY:

Explain that advertisers often go to extremes to try to sell their product. Often the information conveyed is misleading. Ask students to think of any ads they think fit this model. You might ask students to choose advertisements which illustrate these techniques. (Either ask students to bring them from home or provide magazines in class and allow time for them to select these ads.)

Following this brief discussion, ask each student to write an advertisement for a dental product in two different ways. First, they should write a sensationalistic ad, then a realistic ad. Also, they should summarize similarities and differences at the end. Information in the realistic ad must be true and accurate. Should questions arise during preparation of the assignment, students should consult a dentist or other resource to get accurate information. (1 week outside class)

After the assignment is turned in, the class should discuss the results of their learning. A few examples of the ads may be read to the class and students can discuss the characteristics of realistic and sensationalistic ads. They may consider how much a dental product itself can be expected to achieve realistically. (1/2 hour)

SUGGESTED RESOURCES:

Possibly dental consultant for students; P26 "How to Become a Wise Dental Consumer," 25 @ $2.55, 100 @ $9.70, 500 @ $45.90, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Science/Health Education
Jr. High or High School
Fluoride
1 class period

OBJECTIVE: The student explains the relationship between fluoride and dental decay.

SUGGESTED CONTENT:

Fluorides help reduce dental decay. They can be obtained from several sources: water supply, pills, topical application, toothpaste. Water fluoridation is most effective as a public health measure because it reaches everyone and is inexpensive. In some places, fluoride occurs naturally in the water. (This is where its effectiveness in reducing dental decay was discovered.)

LEARNING ACTIVITY:

Ask the class if they know what fluoride is; is their water supply fluoridated; has anyone had a fluoride treatment? If so, ask if they know the purpose of fluoride with regard to teeth. Encourage students to tell all they know about fluoride and then finish the lesson with the remaining content. If students mention the objections to fluoride, refer to fluoride pamphlets and perhaps refer them to additional information. Acknowledge that this is a controversial issue.

SUGGESTED RESOURCES:

G2 "Why Your Dentist Recommends Fluoridation," 25 @ $ .55, 100 @ $2.10, 500 @ $10.00; G9 "Fluoride Helps Prevent Tooth Decay," 25 @ $ .55, 100 @ $2.10, 500 @ $10.00; G21 "Fluoridation Facts," 25 @ $4.65, 100 @ $17.75, 500 @ $84.10, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Mathematics
Jr. High and High School
Graphing Dental Data
1 class period

OBJECTIVE: The student constructs an accurate graph using data from a real or hypothetical dental health survey.

SUGGESTED CONTENT:

The chart below gives some data on decayed, missing, and filled (DMF) teeth. The data could be graphed in several ways: all data used; DMF, D, M, F alone; correlate data with age; correlate data with sex.

Other types of data include correlating dental health with education, income, fluoridation, oral hygiene practices, professional dental care, and dietary practices. In general, dental health is better among people with more education, more income, exposures to fluoride, good oral hygiene practices, regular, professional dental care, and low sugar diets.

LEARNING ACTIVITY:

Hand out an assignment which includes dental data. Instruct the students to put this data into a graphic form (line graph, bar graph, tables) in such a way as to make the numbers meaningful. As an alternative to the data provided by you, students may generate their own data and graph it. (They may do a survey in the class or in their families to determine missing and filled teeth.)

SUGGESTED RESOURCES:

*Table 1. Average number of decayed (D), missing (M), and filled (F) teeth per person among youths 12-17 years, with standard errors of the estimates, by age, sex, and race: United States, 1966-70

Age and sex	All DMF teeth	D teeth	M teeth	F teeth
	Total	Total	Total	Total
Both sexes	Number of teeth			
12-17 years..	6.2	1.7	0.7	3.8
12 years.....	4.0	1.2	0.4	2.3
13 years.....	4.7	1.5	0.5	2.8
14 years.....	5.9	1.8	0.6	3.5
15 years.....	7.0	1.9	0.8	4.2
16 years.....	7.4	1.9	0.8	4.6
17 years.....	8.7	2.0	1.1	5.6

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Mathematics
Jr. High and High School
Graphing Dental Data
1 class period

SUGGESTED RESOURCES Cont'd...

*Table 1. Average number of decayed (D), missing (M), and filled (F) teeth per Cont'd. person among youths 12-17 years, with standard errors of the estimates, by age, sex, and race: United States, 1966-70

Age and sex	All DMF teeth	D Teeth	M teeth	F teeth
	Total	Total	Total	Total
	Number of teeth			
Male				
12-17 years..	5.8	1.7	0.7	3.5
12 years.....	3.6	1.2	0.4	2.1
13 years.....	4.4	1.3	0.5	2.6
14 years.....	5.5	1.8	0.6	3.1
15 years.....	6.6	1.8	0.8	4.0
16 years.....	7.0	1.9	0.9	4.2
17 years.....	8.6	2.2	1.2	5.2
Female				
12-17 years..	6.5	1.7	0.7	4.1
12 years.....	4.3	1.3	0.4	2.6
13 years.....	5.1	1.6	0.5	3.0
14 years.....	6.3	1.7	0.7	3.8
15 years.....	7.4	2.0	0.9	4.5
16 years.....	7.8	1.8	0.8	5.1
17 years.....	8.8	1.8	1.0	6.0

*Kelly, James, Decayed, Missing and Filled Teeth Among Youths 12-17 Years, United States, National Center for Health Statistics, Washington, D.C., Superintendent of Documents, U.S. Government Printing Office, October, 1974, p. 13.

Social Studies (History)
Jr. High or High School
History of Dentistry
Initial: Film - 19 minutes
Discussion - 15 minutes
Follow-up: On-going

OBJECTIVE: The student describes at least three major discoveries that advanced the science of dentistry.

SUGGESTED CONTENT:

A comment which may be made when studying George Washington is this: Why is he never smiling in the pictures of him? He had no teeth and had ill-fitting wooden dentures which caused him great discomfort.

Report topics could include:
1. Changes in dental practices from extracting to saving teeth.
2. Inventions or discoveries which make dental treatment more comfortable:
    a. anesthesia
    b. nitrous oxide
3. History of fluoridation

LEARNING ACTIVITY:

Introduce the film, The Story of Dentistry, by saying that dental practices and procedures have changed considerably throughout history. This film will present some of those practices and discoveries which have advanced the science of dentistry. Students can discuss the film at its conclusion. Suggested questions are: (1) How might their lives be affected had any of these discoveries not been made? (2) Suggest some discoveries that would advance dentistry beyond what it is today.

As students study periods of history in which there were significant occurrences and discoveries in dentistry, you can interject that material and encourage students to do the same.

Alternative to general class discussion: Individual students may prepare reports on aspects of dental history. Preferably, these reports would be shared with the entire class.

SUGGESTED RESOURCES:

Film: DHB-71, The Story of Dentistry, 16 mm, color, sound, 19 minutes, 1964, rental (only) $3.00, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611; Encyclopedias and other books have historical accounts of dentistry. Students may find specific information under specific topics (examples: anesthesia, nitrous oxide).

Social Studies (Geography)
Jr. High and High School
Diet & Fluoride Variations
On-going

OBJECTIVE: Given the opportunity to compare and contrast environmental factors affecting teeth, the student describes similarities and differences between those existing in his or her own culture and in other cultures.

SUGGESTED CONTENT:

1. Sugary foods lead to dental decay.
2. Increased function of teeth makes them stronger and healthier--soft foods do not allow enough function of teeth and gums to keep them healthy.
3. Fluorides reduce incidence of dental decay.
4. Presumably, with all other things equal, people in places with limited medical and dental care facilities will have more untreated, advanced disease.

LEARNING ACTIVITY:

During units on various countries, the foods which are commonly eaten are discussed. Students can determine whether the foods require lots of chewing (hard vs. soft foods) and the sugar content. From this information, they may speculate on the relative incidence of dental disease.
Follow-up Activity: One or more students can be assigned to find out more information if it is available. Other factors which may be examined are presence or absence of natural or added fluorides in the water and availability of medical and dental care.

Alternative to general class discussion: These topics may be placed on a list of suggested report topics and could be presented by individual students or groups of students.

SUGGESTED RESOURCES:

G7 "Your Guide to Oral Health," 25 @ $5.30, 100 @ $20.10, 500 @ $95.15; P12 "Diet and Dental Health," 25 @ $3.20, 100 @ $12.10, 55 @ $57.25, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Home Economics
Jr. High and High School
Diet and Dental Health
Initial: 20 minutes
Follow-up: one or more class periods

OBJECTIVE: Given the opportunity to prepare and eat in class foods of one's own choosing, the student increases the frequency with which he or she selects foods conducive to optimal dental health.

SUGGESTED CONTENT:

Reasons for food selection:

1. social acceptance
2. taste
3. ease of preparation
4. cost
5. general health
6. dental health

Sample questionnaire items:

1. When going out to a restaurant with friends after a football game, would you choose to eat
   a. pizza?
   b. hot fudge sundae?
   c. french fries?
2. If you are home alone for lunch, what would you prepare for yourself to eat?

Foods conducive to optimal dental health contain little or no sugar.

LEARNING ACTIVITY:

Introduce the lesson by saying that we select some foods and reject others for a variety of reasons. The class may be asked to suggest some of these reasons. After filling out a questionnaire in which students select foods they would eat, ask them to discuss why they selected or rejected each food. Then they may discuss foods which they like which also are conducive to optimal dental health. Students may then be assigned to search out recipes containing little or no sugar.
Follow-up Activity: Recipes are brought to class and selected ones are prepared and eaten. Students will then exchange recipes and be encouraged to try the recipes at home.

SUGGESTED RESOURCES:

List of sugar content of foods; P12 "Diet and Dental Health," 25 @ $3.20, 100 @ $12.10, 500 @ $57.25, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Home Economics
Jr. High and High School
Comparative Diets
General Information: Variable
Activity: one class period

OBJECTIVE: Given the opportunity to compare and contrast dietary practices affecting teeth, the student describes similarities and differences between those existing in his or her own culture and in other cultures.

SUGGESTED CONTENT:

Basic 4 food groups.
More sugary and soft foods lead to more decay.

LEARNING ACTIVITY:

Present information about nutritional requirements and the Basic Four food groups. When students feel comfortable with the Basic Four, branch out and suggest that people in other countries and cultures may satisfy nutritional requirements in different ways. (Variable)

Assign students to do research on common foods, including snacks, consumed in a variety of other cultures. After the data have been gathered, students will make up sample menus for a balanced diet with both foods they consume and foods consumed in the culture they studied. (one week outside class)

These menus will be shared with the class. A question for discussion is this: in which countries would one expect to find more (or less) dental decay on the basis of typical food consumption? (one class period)

SUGGESTED RESOURCES:

Basic Four Food Groups Chart (available from National Dairy Council - local and state affiliates); list of sugar content of foods; geography and nutrition books and encyclopedias about other countries; P12 "Diet and Dental Health," 25 @ $3.20, 100 @ $12.10, 500 @ $57.25, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Physical Education & Sports
Jr. High and High School
Dental Safety & First Aid
Initial: 20 minutes w/o film, 30 minutes w/film; Follow-up: 15 minutes

OBJECTIVE: Given the description of a real or hypothetical situation in which a threat of dental injury is involved, the student states the appropriate prevention and treatment measures to be followed.

SUGGESTED CONTENT:

Facial injuries affecting the mouth and teeth are possible in physical activities. Care can be taken to avoid or minimize such accidents. Actively attempt to avoid hitting or falling upon the mouth. To minimize the chances for such trauma, wear mouthguards. Mouthguards come in three forms: stock protector (ready to use), mouth formed (molds to teeth when placed in mouth), custom fabricated (constructed by dentist over model of patient's teeth). Before the advent of faceguards and mouthguards, 50% of football injuries were mouth injuries; most of these have been eliminated now.

If a mouth injury occurs, see your dentist for assessment of the injury. If no treatment is recommended, continue observation of teeth involved and report any change in condition or color to dentist. If a tooth is knocked out, wrap it in a moist cloth and see dentist immediately. Do Not wash off the tooth! Always practice general first aid. If not too much time has elapsed, new techniques often enable dentists to replant the tooth successfully depending on the situation. If professional dental care must be delayed for more than one hour, you may want to carefully replant tooth. Any dental injury warrants professional care.

LEARNING ACTIVITY:

Describe a situation in which a student was hit in the mouth with a baseball bat and dental injury resulted. Ask students to discuss prevention and treatment of that accident and then variations of it: (1) tooth knocked out, (2) tooth fractured, (3) soft (lip) tissue injury, (4) no visible trauma. Students should be encouraged to carry the discussion, but it is your responsibility to make sure the suggested content is covered and that students take the implications of dental accidents seriously.

Follow-up Activity:

1. If any questions remain unanswered, one or more students may be asked to find answers from a dentist or other source.
2. Several students may be asked to find out more about mouthguards from their dentists and athletic trainers and report to the class.

SUGGESTED RESOURCES:

Mouthguards from athletic department or dentists; DHB-62 Film, Block That Kick (in the teeth), 16 mm, color, sound, 15 minutes, 1962, rental $3.00, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611; "Mouth Protectors: 11 Years Later," Reports of Councils and Bureaus/JADA, Vol. 86, June, 1973.

Music
Jr. High and High School
Teeth and Music
15 minutes

OBJECTIVE: The student explains the relationship between one's teeth and the ability to sing or to play a musical instrument.

SUGGESTED CONTENT:

Teeth help in singing: with the tongue and lips, they help people form different words and sounds. Teeth help in instrumental music (brass and winds): the instruments often rest on the teeth. Lip formations are dependent on teeth for support. Various malocclusions may cause difficulty to these musicians.

If teeth are missing, support for mouth formations would be hindered. Pressure from musical instruments may be uncomfortable on soft tissues if a person has braces. Dentures may make mouth formations difficult and could impede speech or singing.

LEARNING ACTIVITY:

Initiate a discussion of the importance of teeth in music by asking students (both vocal and instrumental) to figure out why teeth are necessary to music. Discussion questions could include:

1. How do teeth contribute to their ability to sing or play musical instruments?
2. What differences might it make in your musical abilities, if any, if you:
    a. were missing teeth?
    b. have braces?
    c. have false teeth?

SUGGESTED RESOURCES:

None.

Art
Jr. High and High School
Dental posters
One class period

OBJECTIVE: The student prepares a visual display that will facilitate the learning of others by communicating accurate information about dental health.

SUGGESTED CONTENT:

Dental safety
Functions of teeth
Visiting the dentist
Home oral health care
Plaque
Fluorides
Tooth decay
Sugar and your teeth
Braces

LEARNING ACTIVITY:

Suggest that visual displays are needed for the school and community to remind the public and both students and teachers about dental health. Provide students with materials, and ask them to design projects that communicate a dental health concept. Suggestions for content are offered here, but anything dealing accurately and positively with dental health is appropriate. Upon completion of the project, students will place their displays in the school and community as is permitted. This activity may be repeated as desired with different subject areas or art materials.

SUGGESTED RESOURCES:

Art materials; G7 "Your Guide to Oral Health," 25 @ $5.30, 100 @ $20.10, 500 @ $95.15, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Art
High School
Dental Materials
Initial: one class period
Follow-up: 20 minutes

OBJECTIVE: Given the opportunity to experiment with a variety of materials, the student can explain why the physical properties of each make it useful both in dentistry and as an art medium.

SUGGESTED CONTENT:

Similarities between art and dentistry:

Both require precision, dexterity and spatial relations.

Many materials are similar. Examples: plaster, metals.

LEARNING ACTIVITY:

Introduce the lesson by asking students what similarities there might be between being an artist and practicing dentistry. The experiment, "Dimensional Changes in the Setting of Plaster of Paris," explained in the resource listed below, illustrates the property of expansion. Give the introduction suggested in the pamphlet, and then allow students to do the experiment. Since the plaster needs time to set, it is necessary to observe results at another class session. At the next class session, students should observe the results of the experiment and discuss the significance of expansion when an artist or dentist is aiming for precision. Finally, mention again the relationship between artistic abilities and dental skills. Encourage interested students to consider a career in the field of dentistry (dentist, dental hygienist, dental assistant, dental lab technician).

SUGGESTED RESOURCE:

R3 "Dental Projects for High School Science Students," $5.50 for 50 copies, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Social Studies (Government)
High School
Health Care Delivery Systems
Initial: one class period
Follow-up: one class period

OBJECTIVE: The student describes similarities and differences among at least three current and proposed medical and dental care delivery systems.

SUGGESTED CONTENT:

Types of delivery systems:
1. Solo practitioner
2. Partnership
3. Group practice
4. Health Maintenance Organization (HMO)
5. Clinic

With the solo practitioner, partnership, and group practice, the patient usually sees the same physician each time. These organizations are usually small, with the exception of the larger group practices. Some people say that these delivery systems offer more personal care than the latter two. HMO's and clinics generally employ many professionals and paraprofessionals. Unless patients request otherwise, they may see a different physician each visit. This leads to less personal care.

LEARNING ACTIVITY:

Open the discussion by saying that there are a number of different health care delivery systems. Ask students to describe those with which they are familiar. You may supplement their list with other systems. The class is divided into groups (one class period). Each group is assigned to do research on one care delivery system (one week outside class). Each group will present highlights of their findings to the class including answers to these questions:
1. Do you always see the same doctor, or do you see different doctors each time in this system?
2. What is the physical setup like?
3. How personal is the service received?
(one class period)

SUGGESTED RESOURCES:

A book dealing with new systems of health care organization such as, Economics of Health and Public Policy, by Rita Ricardo Campbell, American Enterprise Institute, 1973; health care agencies and organizations; practitioners and patients in each type of delivery system.

Social Studies (Economics)
High School
Budgeting for Dental Care
Initial: one class period
Final: one class period

OBJECTIVE: Given the opportunity to obtain information concerning three alternative approaches to the use of professional dental health services, the student describes the potential costs and benefits associated with each.

SUGGESTED CONTENT:

I. Three different approaches to dental care
   A. Preventive dental care involves: prophylaxis, fluoride treatments, X-rays, pit and fissure sealants, dental health education.
   B. Routine restorative care (that which may be done for patients with relatively good dental health who seek regular dental care) involves: amalgams, gold restorations, endodontics.
   C. Extensive restorative care (that which may be done for patients with extensive destruction or missing teeth) involves: partial or full dentures (removable), fixed bridges, endodontics.

II. Cost vs. Benefit of seeking preventive, routine treatment
   A. Types of costs
      Physical, psychological, use of time, expenditure of energy, social disapproval, pain, inconvenience, money
   B. Types of benefits
      physical health, appearance, comfort, ability to chew, psychological, social approval, time and money saved.

Preventive dental care should prove to be the most economical and effective in promoting good dental health (benefits greater than costs).

LEARNING ACTIVITY:

Introduce the lesson by saying that there are different ways of approaching dental care, and costs differ as well. Divide the class into three groups so they can organize their plans for finding out costs of (1st group) preventive care, (2nd group) routine restorative care, (3rd group) neglectful extensive restorative care. Allow groups one week to gather information before reporting to the class their findings. Following the reports, students can discuss which route is most economical and effective in promoting good dental health.

SUGGESTED RESOURCES:

Lists of usual and customary fees can be obtained from insurance companies, dental societies, or individual dentists.

Social Studies (Government)
High School
Health Care Payment Systems
Initial: 1 class period
Follow-up: 1 class period; on-going

OBJECTIVE: The student describes similarities and differences among at least three current and proposed systems of payment for medical and dental care.

SUGGESTED CONTENT:

Material to be presented about National Health Insurance should be current. It should include legislation, opinions of authorities and the public, and the main points of the proposals. Payment systems to be studied could include:

1. Regular (traditional medical insurance)
2. Unions' provisions
3. Health Maintenance Organizations (HMO - prepaid)
4. National Health Insurance

LEARNING ACTIVITY:

Open the discussion by mentioning the legislation pending regarding National Health Insurance. Present the main points of the proposal. Then list other kinds of payment for health care. Divide the class into groups. (one class period)

Each group will be assigned to research a different payment system. (one week outside class)

Each group will present highlights of their findings to the class, paying particular attention to dental coverage. (one class period)

To follow up, continue learning experience by watching and discussing developments in the legislative proposals in the news. (on-going)

SUGGESTED RESOURCES:

Legislative records; a book dealing with new systems of health care organization such as Economics of Health and Public Policy, by Rita Ricardo Campbell, American Enterprise Institute, 1973; health insurance companies; health care agencies and organizations; patients and practitioners; magazines, newspapers.

Sociology
High School
Attitudes Toward Health Care
One class period

OBJECTIVE: The student explains three variables which affect attitudes about and utilization of health care services among sociocultural groups.

SUGGESTED CONTENT:

Influencing factors:

1. Old wives' tales
2. Finances
3. Differences in values about health
4. Cultural gap between person and practitioner
5. Availability of services
6. Alternative methods of treatment (examples: herbs, faith-healing)
7. Time
8. Fear

Various programs can be set up in an attempt to fulfill people's health needs. The most important factors to remember are:

1. Ask the people what they want in order to have their health needs met. (Otherwise, your program will do little to accomplish their goal).
2. Plan programs with, not for, the people. If they feel they were an integral part of the program, chances for success will be better, and it should satisfy their needs more adequately.

LEARNING ACTIVITY:

Introduce the lesson by saying that there is a difference between cultures and classes with regard to ideas about health care. Ask students to generate ideas about factors which may influence attitudes about and utilization of health care services. You may supplement their list with variables listed in content section. Students will then be asked if they know any ways to meet the needs of all, in order to achieve the goal of health (as perceived by the individual) for all.

SUGGESTED RESOURCE:

General sociology text may offer background material on sociocultural characteristics of various groups.

Psychology
High School
Fear and Anxiety in Dentistry I
One class period

OBJECTIVE: The student states three reasons why people might be afraid or anxious about going to the dentist.

SUGGESTED CONTENT:

Possible reasons for fear and anxiety:

1. Prior bad dental experience
2. Exaggerated stories from parents and friends
3. Fear of unknown
4. Expense
5. Pain

LEARNING ACTIVITY:

The class discusses the phenomena of fear and anxiety in general. Then ask students to deal specifically with the dental situation, one which traditionally has evoked fear and anxiety. Students should think of all the possible reasons that people act this way. At the end of the discussion, emphasize that often these fears and anxieties are unfounded in rational behavior because of the advances made in modern dentistry.

SUGGESTED RESOURCES:

General psychology text with information about fear and anxiety; personal experiences.

Psychology
High School
Fear and Anxiety in Dentistry II
30 minutes

OBJECTIVE: The student describes at least three actions one could take to try to overcome any fear or anxiety felt about going to the dentist.

SUGGESTED CONTENT:

Possible remedies for fear and anxiety:

1. Go to a dental office just to observe for several hours.
2. Ask questions about equipment and procedures which make you anxious.
3. Read dental health educational materials so you can learn more about dentistry and dental health.
4. Tell your dentist or auxiliaries you are afraid and anxious so they may try to put you at ease.
5. Participate in informal discussions which will help you determine the cause of your fear and might help you reduce your anxiety.
6. Choose a dentist concerned about pain control and the general welfare of patients.

LEARNING ACTIVITY:

The class is reminded of the list of reasons for fear and anxiety about going to the dentist generated in the previous discussion. Then divide students into groups of five in which they could overcome their fears and anxieties. At the end of the activity, each group will share their ideas with the rest of the class.
Follow-up Activity: If students take any of these actions the next time they go to the dentist, they may wish to share their experiences and indicate whether or not the action taken reduced their fear and anxiety.

SUGGESTED RESOURCES:

General pychology text with information about fear and anxiety; personal experiences.

Psychology
High School
Teeth and Self-Esteem
One class period

OBJECTIVE: The student demonstrates awareness of the relationship between dental health and social relationships by giving examples of social situations which could be affected by one's dental health.

SUGGESTED CONTENT:

Self-esteem
Pride
Self-concept

Example: Appearance affects one's self-concept. People with poor teeth may withdraw and become overly conscious of their mouths. The problem may begin to be remedied when people seek dental treatment and begin to practice good home care for their teeth and gums.

LEARNING ACTIVITY:

As students discuss self-esteem, pride, and self-concept, ask them to consider the effect of dental health on those feelings. If at the end of the discussion students miss the point, you should relay the suggested content. Students should suggest ways persons can overcome bad feelings about their mouths.

SUGGESTED RESOURCE:

General psychology text including material on self-esteem and self-concept.

Guidance/Business or
Distributive Education
High School
Jobs and Dental Health
30 minutes

OBJECTIVE: The student describes the relationship between good dental health and the qualities employers seek in job applicants.

SUGGESTED CONTENT:

Qualities such as the following are desirable:

1. Pleasant and clean appearance
   --a nice smile enhances appearance and depends upon:
     a. healthy teeth
     b. clean teeth
     c. ideally, but not necessarily, straight teeth
   --lack of offensive characteristics
     a. halitosis (bad breath) can usually be prevented if dental health is good
2. Good attendance record
   --if dental health is poor, pain may be imminent, and this may necessitate absence from work; if dental health is good, routine care requires little time off work
3. Self-confidence and good self-concept
   --a person with poor teeth may be self-conscious about them and may tend to withdraw because of embarrassment about appearance.

LEARNING ACTIVITY:

Initiate a discussion of personal qualities sought in employees. Students should be encouraged to suggest the effects of dental health on employment, and you should supplement the areas they neglect to mention.

SUGGESTED RESOURCE:

Personal experiences.

Guidance
High School
Dental Careers
Several months for research
Presentation time: variable

OBJECTIVE: The student presents a comprehensive report about a dental career.

SUGGESTED CONTENT:

Dental careers:

Dentist
Dental hygienist
Dental assistant
Dental lab technician

LEARNING ACTIVITY:

During a project in which students are exploring different careers, some students may wish to prepare reports on the opportunities in the field of dentistry. All students (male, female, upper and lower class, all races and cultures) should be encouraged to look at all careers within dentistry. The report should include the nature of the work, personal and educational qualifications, advantages and disadvantages, salary, fringe benefits, and the employment picture. Following preparation of the reports, class presentations may be made.

SUGGESTED RESOURCES:

Local, state, and national dental associations; dental schools; dentists, dental hygienists, dental assistants, dental lab technicians; G16 "The Art and Science of Dentistry," 25 @ $6.35, 100 @ $24.15, 500 @ $114.50, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Family Living/Home Economics/
Health Education
High School
Prenatal Dental Care
On-going

OBJECTIVE: The student lists at least five maternal practices that promote good dental health during pregnancy.

SUGGESTED CONTENT:

During pregnancy, a mother's normal hormonal balance may be upset. This sometimes contributes to unhealthy changes in her mouth, such as bleeding and puffy gums. A mother's teeth are not affected--calcium is not drawn out of her teeth to supplement the baby's needs. Tooth problems are most often related to neglect during the busy time before and after the baby is born. Because the baby's teeth are forming during the prenatal period, the mother's diet is important for both the baby and the mother.

Practices which promote dental health:

1. Eat a balanced diet.
2. Maintain good oral hygiene.
3. Limit sweets
4. Visit the dentist.
5. Seek prenatal care from your physician.
6. Avoid drugs not prescribed by your physician. (Do not take tetracycline--it will cause staining of the baby's teeth.)

LEARNING ACTIVITY:

In a discussion of general prenatal development, students are taught about dental development and care. Explain that many changes take place in a pregnant woman's body, including changes in the oral condition. Ask students for ideas on enhancing the health (especially dental) of the baby and mother. Ask students to generate ideas about how they might best enhance dental health. Supplement their list by presenting suggested content. An obstetrician and a dentist may be interviewed or invited to class to share their views on this subject.

SUGGESTED RESOURCES:

Dentist and obstetrician; G39 "Mothers Want to Help," 25 @ $3.00, 100 @ $11.35, 500 @ $53.75, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Family Living/Home Economics/
Health Education
High School
Children's Dental Care
On-going

OBJECTIVE: The student lists at least five parental practices that promote good dental health during infancy and childhood.

SUGGESTED CONTENT:

Newborn:

1. Make sure the baby eats balanced meals, including milk.
2. Do not feed the baby sugar water or sweetened drinks.
3. Wipe out mouth with cloth before teeth erupt; brush child's teeth daily when they erupt.
4. Avoid tetracycline (stains baby's teeth).

Child:

1. Set a good example.
2. Until child is able, brush and floss teeth; then encourage the child to do it (help with brushing until about age six, help with flossing until about age eight).
3. Take the child to the dentist at age three for examination, cleaning, fluoride treatment, and X-rays. Return for a check-up every six months.
4. Feed the child balanced meals and limit sweet snacks.
5. Avoid tetracycline (stains child's teeth during formation).

LEARNING ACTIVITY:

In a discussion of general child development, students are taught about dental development and care. Explain that there are practices which promote a child's dental health. Ask students to generate ideas about how they might best enhance dental health. As students make suggestions, emphasize that the same principles about decay and gum disease apply to children and adults. Supplement their list with the suggested content. A dentist and a pediatrician may be interviewed or invited to class to share their views on this subject.

SUGGESTED RESOURCES:

Dentist and pediatrician; S7B "Your Child's Teeth," 25 @ $2.30, 100 @ $8.75, 500 @ $41.50; P29 "Nursing Bottle Mouth," 25 @ $1.10, 100 @ $4.10, 500 @ $19.45; G39 "Mothers Want to Help," 25 @ $3.00, 100 @ $11.35, 500 @ $53.75; G40 "Parents Want to Help," 25 @ $4.50, 100 @ $17.10, 500 @ $81.10, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611. Rabinowitz, Melba, "Why Didn't Anyone Tell Me About Bottle Mouth Cavities?" Children Today, March-April, 1974, pp. 18-20.

Science
High School
Dental Materials
On-going

OBJECTIVE: The student lists five physical properties common to materials used in restoring teeth and other materials.

SUGGESTED CONTENT:

Stress, strain, elastic or proportional limit, modulus of elasticity, ductility, hardness, flow, coefficient of thermal expansion, thermal conductivity, corrosion

An ideal dental material would possess these properties: it must

1. withstand biting forces
2. be non-injurious to health
3. have pleasing appearance
4. be readily manipulatable
5. withstand extreme temperature changes
6. be able to be fabricated into small restorations
7. withstand extreme changes in pH
8. adequately seal the cavity preparation
9. last as long as the tooth
10. harden or set up in a short period of time
11. be readily available
12. be inexpensive

LEARNING ACTIVITY:

Ask students to suggest properties of an ideal dental restorative material. You may supplement their list with the list provided here. Keep the listed properties in mind and when you discuss any of them, make reference to its significance to dental materials. Students may be asked to determine the desirability of various materials for dental restorations on the basis of the criteria for the ideal dental material.

Cont'd next page...

Science
High School
Dental Materials
On-going

SUGGESTED CONTENT Cont'd...

All dental materials have some limitations. Silver amalgam and gold are most often used as restorations. Other metals such as iron and steel are unsuitable because they rust and corrode and cannot be fabricated into small restorations. Non-metals often cannot withstand the acidity or alkalinity in the oral environment. Also, they do not support biting forces as well. A material such as concrete has obvious disadvantages: too heavy, too long to harden, too coarse.

SUGGESTED RESOURCES:

A dental materials text such as: Phillips, Ralph W., Elements of Dental Materials for Dental Hygienists and Assistants, 2nd edition, Philadelphia: W. B. Saunders Company, 1971.

Science
High School
Dental Experiments
Variable Time

OBJECTIVE: The student successfully performs at least two experiments which illustrate dental concepts.

SUGGESTED CONTENT:

Taken from "Dental Projects for High School Science Students":

1. Oral Anatomy and Histology
   a. Changes in the teeth with age
   b. Comparative dental anatomy
2. Oral Biochemistry
   a. The quantity of saliva
   b. Amylase activity of saliva
   c. Acid production in the mouth
      --Qualitative demonstration
      --Quantitative demonstration
   d. Production of artificial calculus (tartar)
3. Oral Microbiology
   a. Incidence of Candida albicans in saliva
   b. Survey of oral bacteria
4. Experiments with Laboratory Animals
5. Dental Materials
   a. Dimension changes of dental plaster
6. Procedures in dental technology

The experiments are explained in detail in the suggested resource.

LEARNING ACTIVITY:

Offer opportunities for students to perform dental experiments in the laboratory. Help students to learn basic laboratory techniques and facts as well as specific information related to dentistry.

SUGGESTED RESOURCES:

R3 "Dental Projects for High School Science Students," 50 @ $5.50; Film: DHC-81 Laboratory of the Body, 16mm, color, sound, 28 1/2 minutes, 1968, free loan (purchase: $100.00), American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611; Book: The Laboratory of the Body, Pyramid Publications, Dept. ADA-MO, 9 Garden Street, Moonachie, N.J. 07074. $ .95 ea. paperback, $6.95 ea. hardcover. These three sources are companion materials.

Science/Health Education
Jr. High or High School
Preventive Dental Measures
One or more class periods

OBJECTIVE: Given a list of recommended dental health practices, the student describes the advantages and disadvantages associated with (a) adopting and (b) not adopting each.

SUGGESTED CONTENT:

Recommended dental health practices:

1. Dental check-up: teeth, gums, soft tissue, head and neck; every six months; to detect problems early in order to prevent unnecessary complications
2. Prophylaxis (teeth cleaning); every six months or as directed by dentist; to remove calculus (tartar) and stain in order to prevent periodontal problems from progressing
3. Fluoridation
   a. in water supply - about 1 part per million
   b. topical application - for children, primarily; every six months or as indicated to prevent tooth decay
4. Low sugar diet - to prevent decay
5. Good oral hygiene
   a. toothbrushing with soft brush; at least once a day
   b. flossing; at least once a day to remove dental plaque, to prevent dental decay and gum disease

LEARNING ACTIVITY:

Students will be broken down into groups of three or five to discuss preventive measures which reduce oral health problems. Give each group one of the practices listed in content section, and ask them to draw conclusions about the cost and benefits using these questions as guidelines: (1) What do I stand to gain from each practice or procedure if I adopt it? (2) What will its adoption "cost" me? (3) What do I stand to lose if I don't adopt each? (4) What gains, if any, are there if I don't adopt each? Students should be directed to consider possible physical, emotional, social, economic, and other consequences of (a) adopting and (b) not adopting each recommended practice or procedure. Each group will then select a representative to report the results of their discussion to the rest of the class. Selected students will be asked to explain the importance of each procedure or practice to themselves. At the conclusion of the discussion, emphasize that although these measures help everyone, individuals must evaluate their own needs and establish an optimal dental care program for themselves.

SUGGESTED RESOURCE:

G7 "Your Guide to Oral Health," 25 @ $5.30, 100 @ $20.10, 500 @ $95.15, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Student Government
Jr. High and High School
Snacks
On the agenda of several meetings

OBJECTIVE: Given the opportunity to decide which snack foods will be available at school, the student selects snacks, 50% of which are conducive to good dental health.

SUGGESTED CONTENT:

Foods containing refined sugars lead to dental decay most rapidly. Carbohydrates which are not "sweet" can also lead to decay (because they are soft and stick to the teeth) but they are not as bad for teeth as foods loaded with sugar.

Suggested snacks include:

Apple cider
Fruit juices (unsweetened)
Fresh fruits and vegetables
Nuts
Popcorn

LEARNING ACTIVITY:

You or a student may suggest the topic of snack foods to a student government member, indicating that a policy could be established to limit availability of sweet snack foods and drinks at school. This student takes the idea to the next meeting, presents it, and proposes that the idea be considered. Areas of concern could involve:

1. Can they control which foods are offered in vending machines? If so, find out costs and availability of having non-sugar foods. A committee could look into this and report back at a later meeting.
2. School parties offer snacks. Committees working on refreshments should consider foods students enjoy which are conducive to dental health.
3. If there are school organizations involved in selling food for fund-raising, they should be advised of the desirability of limiting sales to non-sugary foods.
4. A committee should meet with food service personnel to see if there is a need to change any food on school menus to improve dental health.

Cont'd next page...

Student Government
Jr. High and High School
Snacks
On the agenda of several
meetings

LEARNING ACTIVITY Cont'd...

Following investigation of these and other related areas of concern the student government body can create a policy which seeks to limit the availability of snack foods at school to those which are enjoyed which also promote dental health.

SUGGESTED RESOURCES:

List of good snack foods, list of sugar content of food; P12 "Diet and Dental Health," 25 @ $3.20, 100 @ $12.10, 500 @ $57.25, American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611

Library
All levels
Dental Health Education
Materials
On-going

OBJECTIVE: The student reads at least one dental health education pamphlet each year.

SUGGESTED CONTENT:

Pamphlets could include the following topics (taken from the contents of American Dental Association Catalog):

General preventive dentistry
Plaque control
Nutrition
Fluorides
Consumerism
Toothbrushing
Flossing
Dental careers
Dental safety
Periodontology
Orthodontics
Endodontics
Prosthodontics
Oral Surgery
Radiography
Restorative dentistry
Smoking education

LEARNING ACTIVITY:

Actively seek pamphlets on dental health and dentistry from available sources. When these are present in the library, they are placed at a desk labeled attractively as "The Tooth Corner" or a similar title appropriate to student's developmental stage. Students should be informed of the existence of the materials at their leisure. These materials may expand upon concepts they already know, or they may present new ideas.

SUGGESTED RESOURCES:

American Dental Association, 211 E. Chicago Ave., Chicago, Ill. 60611, prepares objective materials about a wide range of topics (free catalog available); National Dairy Council and local affiliates; various manufacturers of dental products (may include advertising)

RESOURCE LIST

Materials available from the American Dental Association, 211 E. Chicago Ave., Chicago, Illinois, 60611 (1976 prices quoted):

"The Art and Science of Dentistry" (pamphlet), G16, 25 @ $6.35, 100 @ $24.15, 500 @ $114.50.

Block That Kick (In the Teeth) (film), DHB-62, 16mm, color, sound, 15 minutes, 1962, rental $3.00.

"Casper and Space-Age Dentistry" (pamphlet), G47, 25 @ $2.05, 100 @ $7.75, 500 @ $36.80.

"Dental Projects for High School Science Students" (pamphlet), R3, 50 @ $5.50.

"Diet and Dental Health" (pamphlet), P12, 25 @ $3.20, 100 @ $12.10, 500 @ $57.25.

"Dudley the Dragon" (pamphlet), G45, 25 @ $1.55, 100 @ $5.90, 500 @ $27.90.

"Fluoride Helps Prevent Tooth Decay" (pamphlet), G9, 25 @ $ .55, 100 @ $2.10, 500 @ $10.00.

"Fluoridation Facts" (pamphlet), G21, 25 @ $4.65, 100 @ $17.75, 500 @ $84.10.

"How to Become a Wise Dental Consumer" (pamphlet), P26, 25 @ $2.55, 100 @ $9.70, 500 @ $45.90.

"Kick the Sweet Snack Habit" (pamphlet), P28, 100 @ $2.90, 500 @ $13.80.

Laboratory of the Body (film), DHC-81, 16mm, color, sound, 28 1/2 minutes, 1968, free loan, purchase $100.00.

Learning About Your Oral Health (teaching packets), K-3, 4-6, 7-9, 10-12 grade levels, $4.00 per packet per level.

"Mothers Want to Help" (pamphlet), G39, 25 @ $3.00, 100 @ $11.35, 500 @ $53.75.

"Nursing Bottle Mouth" (pamphlet), P29, 25 @ $1.10, 100 @ $4.10, 500 @ $19.45.

"Parents Want to Help" (pamphlet), G40, 25 @ $4.50, 100 @ $17.10, 500 @ $81.10.

The Story of Dentistry (film), DHB-71, 16 mm, color, sound, 19 minutes, 1964, rental (only) $3.00.

"What Happened to Mike?" (pamphlet), G34, 100 @ $4.75, 500 @ $22.40.

"Why Your Dentist Recommends Fluoridation" (pamphlet), G2, 25 @ $ .55, 100 @ $2.10, 500 @ $10.00.

RESOURCE LIST Cont'd...

"Your Child's Teeth" (pamphlet), S7B, 25 @ $2.30, 100 @ $8.75, 500 @ $41.50.

"Your Guide to Oral Health" (pamphlet), G7, 25 @ $5.30, 100 @ $20.10, 500 @ $95.15.

"Your Teeth and What They Do" (pamphlet), S4, 25 @ $1.60, 100 @ $6.10, 500 @ $28.80.

OTHER RESOURCES

"Basic Four Food Groups" (chart), National Dairy Council and state and local affiliates.

Campbell, Rita Ricardo, Economics of Health and Public Policy (booklet), American Enterprise Institute, 1973.

Kelly, James, Decayed, Missing, and Filled Teeth Among Youths 12-17 Years, United States (report), National Center for Health Statistics, Washington, D.C., Superintendent of Documents, U.S. Government Printing Office, October, 1974.

The Laboratory of the Body (book), Pyramid Publications, Department ADA-MO, 9 Garden Street, Moonachie, New Jersey 07074, $ .95 paperback, $6.95 hard cover.

"Mouth Protectors: 11 Years Later" (article), Reports of Councils and Bureaus, Journal of the American Dental Association, Vol. 86, June, 1973.

Phillips, Ralph W., Elements of Dental Materials for Dental Hygienists and Assistants, 2nd edition, (book), Philadelphia: W. B. Saunders Company, 1971.

Rabinowitz, Melba, "Why Didn't Anyone Tell Me About Bottle Mouth Cavities?" (article), Children Today, March-April, 1974, pp. 18-20.

The Toothache Mystery: The Trial of the Dental Health Six (play), Crest Professional Services Division, Procter and Gamble, 301 E. Sixth St., Cincinnati, Ohio 45202 (one of many free materials).

Also Available From AAHPER. . .

EVERYBODY'S SKIN MAKES EVERYBODY KIN
A series of filmstrips for use in grades 4-9, designed to help children understand and appreciate how the skin affects their appearance, plays its role in sensation and feeling, and protects them against some of the hazards of their environment.

HEALTH APPRAISAL OF SCHOOL CHILDREN
Standards for determining the health status of school children.

HEALTH OF SCHOOL PERSONNEL
Treats problems concerning health of school staff, including preemployment and periodic health examinations, tenure, sick leave, insurance.

HEALTH PACKET FOR ELEMENTARY SCHOOL
Ten or more items on topics such as nutrition, safety, dental health, sex education and the school lunch program — with sample growth charts for boys and girls.

HEALTH PACKET FOR SECONDARY SCHOOL
Ten or more items to help the teacher educate students in such areas as dental health, human reproduction, safety, and current health problems.

HEALTHFUL SCHOOL ENVIRONMENT
A complete revision of the earlier *Healthful School Living,* providing a comprehensive, up-to-date guide to healthful school environment.

LEARNING ABOUT ALCOHOL
A RESOURCE BOOK FOR TEACHERS
Practical information for classroom teachers, health educators, school nurses, youth workers and others who teach about alcohol. Contributions from a special committee of educators, physicians and sociologists, designed to aid the instructor in deciding what approaches to alcohol education will be most effective in relation to the realities that exist in today's classrooms. With an extensive bibliography of teaching media and sources.

READINGS IN MENTAL HEALTH EDUCATION
A series of 43 articles offering educators at all levels cognitive materials and ideas for improving the mental health of young people. The articles, contributed by national authorities for 1970-75 issues of *School Health Review/Health Education,* encourage education for positive adjustment to life through values clarification and improvement of self esteem and decision-making skills.

RESOURCE BOOK FOR DRUG ABUSE EDUCATION
Summaries of factual information on the major drugs of abuse, and techniques and suggestions for communicating with young people on this major health problem.

SCHOOL HEALTH SERVICES
Comprehensive guide for health procedures in small or large school systems.

STRESS TRAINING FOR TEACHERS (Films)
Three film modules designed to stimulate discussions leading to mature behavior under stress. For high school teachers, advanced education courses and inservice training.

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A concise policy statement for the school health program.

WHY HEALTH EDUCATION IN YOUR SCHOOL?
An interpretation of what health education is and is not and why it should be included in school programs.

For prices and order information, write: AAHPER Promotion Unit, 1201 16th St., N.W., Washington, D.C. 20036.